Mini Model Constraints Breakdown:

September 2022

Attempt 1

**Total Acreage**

* 167N\_2021\_NMGT + 167N\_2021\_THNB + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167N\_2050\_NMGT + 167N\_2050\_THNB + 167S\_2021\_NMGT + 167S\_2021\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB + 608\_2021\_AWR + 608\_2021\_NMGT + 608\_2025\_AWR + 608\_2025\_NMGT + 608\_2030\_AWR + 608\_2030\_NMGT + 608\_2050\_AWR + 608\_2050\_NMGT + 999\_2021\_AWR + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR + 999\_2025\_AWR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR + 999\_2030\_AWR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR + 999\_2050\_AWR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 1318480.0

**Yearly Acreages:**

* 2021Acreage
  + 167N\_2021\_NMGT + 167N\_2021\_THNB + 167S\_2021\_NMGT + 167S\_2021\_THNB + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 608\_2021\_AWR + 608\_2021\_NMGT + 999\_2021\_AWR + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR == + 329620.0
* 2025Acreage
  + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 608\_2025\_AWR + 608\_2025\_NMGT + 999\_2025\_AWR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR == + 329620.0
* 2030Acreage
  + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 608\_2030\_AWR + 608\_2030\_NMGT + 999\_2030\_AWR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR == + 329620.0
* 2050Acreage
  + 167N\_2050\_NMGT + 167N\_2050\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB + 608\_2050\_AWR + 608\_2050\_NMGT + 999\_2050\_AWR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 329620.0

**Forest Type Acreages:**

* 505Acreage
  + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB == + 25994.0
* 167NAcreage
  + 167N\_2021\_NMGT + 167N\_2021\_THNB + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167N\_2050\_NMGT + 167N\_2050\_THNB == + 137679.0
* 167SAcreage
  + 167S\_2021\_NMGT + 167S\_2021\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB == + 122092.0
* 608Acreage
  + 608\_2021\_AWR + 608\_2021\_NMGT + 608\_2025\_AWR + 608\_2025\_NMGT + 608\_2030\_AWR + 608\_2030\_NMGT + 608\_2050\_AWR + 608\_2050\_NMGT == + 40786.0
* 999Acreage
  + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 3069.0

**Afforestation:**

* 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_SAR <= + 3069.0
* AffCont30\_25\_CAR
  + 999\_2030\_CAR == 999\_2025\_CAR + 0.0
* AffCont30\_25\_NAR
  + 999\_2030\_NAR == 999\_2025\_NAR + 0.0
* AffCont30\_25\_SAR
  + 999\_2030\_SAR == 999\_2025\_SAR + 0.0
* AffCont50\_30\_CAR
  + 999\_2050\_CAR == 999\_2030\_CAR + 0.0
* AffCont50\_30\_NAR
  + 999\_2050\_NAR == 999\_2030\_NAR + 0.0
* AffCont50\_30\_SAR
  + 999\_2050\_SAR == 999\_2030\_SAR + 0.0

**No Management:**

* NoMgmt\_2021
  + 167N\_2021\_NMGT + 167S\_2021\_NMGT + 505\_2021\_NMGT + 608\_2021\_NMGT + 999\_2021\_NMGT <= + 329620.0
* NoMgmt\_2025
  + 167N\_2025\_NMGT + 167S\_2025\_NMGT + 505\_2025\_NMGT + 608\_2025\_NMGT + 999\_2025\_NMGT <= + 329620.0
* NoMgmt\_2030
  + 167N\_2030\_NMGT + 167S\_2030\_NMGT + 505\_2030\_NMGT + 608\_2030\_NMGT + 999\_2030\_NMGT <= + 329620.0
* NoMgmt\_2050
  + 167N\_2050\_NMGT + 167S\_2050\_NMGT + 505\_2050\_NMGT + 608\_2050\_NMGT + 999\_2050\_NMGT <= + 329620.0

**Ash Salvage:**

* 505\_2025\_ASV + 505\_2030\_ASV + 505\_2050\_ASV <= + 20797.0

**Thinning:**

* ThinTotal
  + 167N\_2021\_THNB + 167S\_2021\_THNB + 505\_2021\_THNB == + 246251.0
* Thin167N\_2021
  + 167N\_2021\_THNB <= + 5197.0
* Thin167S\_2021
  + 167S\_2021\_THNB <= + 127759.0
* Thin505\_2021
  + 505\_2021\_THNB <= + 113295.0

**AWC:**

* TotalCedar
  + 608\_2021\_AWR + 608\_2025\_AWR + 608\_2030\_AWR + 608\_2050\_AWR + 999\_2021\_AWR + 999\_2025\_AWR + 999\_2030\_AWR + 999\_2050\_AWR <= + 40535.0
* AWRConvert2021
  + 608\_2021\_AWR + 999\_2021\_AWR <= + 1000.0
* AWRConvert\_2025
  + 608\_2025\_AWR + 999\_2025\_AWR <= + 4000.0
* AWRConvert\_2030
  + 608\_2030\_AWR + 999\_2030\_AWR <= + 5000.0
* AWRConvert\_2050
  + 608\_2050\_AWR + 999\_2050\_AWR <= + 20000.0

Attempt 2:

Fixed the Thinning constraints so that the correct forest types match the proper acreages. It still resulted in an error.

**Thinning:**

* ThinTotal
  + 167N\_2021\_THNB + 167S\_2021\_THNB + 505\_2021\_THNB == + 246251.0
* Thin505\_2021
  + 505N\_2021\_THNB <= + 5197.0
* Thin167N\_2021
  + 167N\_2021\_THNB <= + 127759.0
* Thin167S\_2021
  + 167S\_2021\_THNB <= + 113295.0

Attempt 3/3.1:

Took all of the forest type acreages and split them by year. Essentially the acreages from Attempt 1 were divided by 4 to accomplish this. In Attempt 3 I split all of the forest types by year, but accidentally left out 167S. In Attempt 3.1, I also split 167S by year, but there’s still an error. It worked in the CMAI run, so I figured why not, but it still resulted in an error. I think that there may be something weird going on the with 999/Afforestation constraints because they both have 3069 on the right side (but 999 constraint is == and afforestation constraint is <=).

Forest Type Acreages by Year:

* 505
  + 505Acreage\_2021
    - 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB == + 6498.5
  + 505Acreage\_2025
    - 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB == + 6498.5
  + 505Acreage\_2030
    - 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB == + 6498.5
  + 505Acreage\_2050
    - 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB == + 6498.5
* 167N
  + 167NAcreage\_2021
    - 167N\_2021\_NMGT + 167N\_2021\_THNB == + 34419.75
  + 167NAcreage\_2025
    - 167N\_2025\_NMGT + 167N\_2025\_THNB == + 34419.75
  + 167NAcreage\_2030
    - 167N\_2030\_NMGT + 167N\_2030\_THNB == + 34419.75
  + 167NAcreage\_2050
    - 167N\_2050\_NMGT + 167N\_2050\_THNB == + 34419.75
* 167S
  + 167SAcreage\_2021
    - 167S\_2021\_NMGT + 167S\_2021\_THNB == + 30523.0
  + 167SAcreage\_2025
    - 167S\_2025\_NMGT + 167S\_2025\_THNB == + 30523.0
  + 167SAcreage\_2030
    - 167S\_2030\_NMGT + 167S\_2030\_THNB == + 30523.0
  + 167SAcreage\_2050
    - 167S\_2050\_NMGT + 167S\_2050\_THNB == + 30523.0
* 608
  + 608Acreage\_2021
    - 608\_2021\_AWR + 608\_2021\_NMGT == + 10196.5
  + 608Acreage\_2025
    - 608\_2025\_AWR + 608\_2025\_NMGT == + 10196.5
  + 608Acreage\_2030
    - 608\_2030\_AWR + 608\_2030\_NMGT == + 10196.5
  + 608Acreage\_2050
    - 608\_2050\_AWR + 608\_2050\_NMGT == + 10196.5
* 999
  + 999Acreage\_2021
    - 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR == + 767.25
  + 999Acreage\_2025
    - 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR == + 767.25
  + 999Acreage\_2030
    - 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR == + 767.25
  + 999Acreage\_2050
    - 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 767.25

Attempt 4:

This isn’t a real attempt. I realized that on our final CMAI run we were using the full private lands acreage for 505 and not the stewardship acreage. It’s been fixed in the CMAI runs (Run 8 is now the final working run!), and I’m fixing those numbers in this attempt as well. There’s obviously still an error.

**Total Acreage**

* 167N\_2021\_NMGT + 167N\_2021\_THNB + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167N\_2050\_NMGT + 167N\_2050\_THNB + 167S\_2021\_NMGT + 167S\_2021\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB + 608\_2021\_AWR + 608\_2021\_NMGT + 608\_2025\_AWR + 608\_2025\_NMGT + 608\_2030\_AWR + 608\_2030\_NMGT + 608\_2050\_AWR + 608\_2050\_NMGT + 999\_2021\_AWR + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR + 999\_2025\_AWR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR + 999\_2030\_AWR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR + 999\_2050\_AWR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 1240564

**Yearly Acreages:**

* 2021Acreage
  + 167N\_2021\_NMGT + 167N\_2021\_THNB + 167S\_2021\_NMGT + 167S\_2021\_THNB + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 608\_2021\_AWR + 608\_2021\_NMGT + 999\_2021\_AWR + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR == + 310141
* 2025Acreage
  + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 608\_2025\_AWR + 608\_2025\_NMGT + 999\_2025\_AWR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR == + 310141
* 2030Acreage
  + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 608\_2030\_AWR + 608\_2030\_NMGT + 999\_2030\_AWR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR == + 310141
* 2050Acreage
  + 167N\_2050\_NMGT + 167N\_2050\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB + 608\_2050\_AWR + 608\_2050\_NMGT + 999\_2050\_AWR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 310141

**Forest Type Acreages:**

* 505Acreage
  + 505\_2021\_ASV + 505\_2021\_NMGT + 505\_2021\_THNB + 505\_2025\_ASV + 505\_2025\_NMGT + 505\_2025\_THNB + 505\_2030\_ASV + 505\_2030\_NMGT + 505\_2030\_THNB + 505\_2050\_ASV + 505\_2050\_NMGT + 505\_2050\_THNB == + 6515
* 167NAcreage
  + 167N\_2021\_NMGT + 167N\_2021\_THNB + 167N\_2025\_NMGT + 167N\_2025\_THNB + 167N\_2030\_NMGT + 167N\_2030\_THNB + 167N\_2050\_NMGT + 167N\_2050\_THNB == + 137679.0
* 167SAcreage
  + 167S\_2021\_NMGT + 167S\_2021\_THNB + 167S\_2025\_NMGT + 167S\_2025\_THNB + 167S\_2030\_NMGT + 167S\_2030\_THNB + 167S\_2050\_NMGT + 167S\_2050\_THNB == + 122092.0
* 608Acreage
  + 608\_2021\_AWR + 608\_2021\_NMGT + 608\_2025\_AWR + 608\_2025\_NMGT + 608\_2030\_AWR + 608\_2030\_NMGT + 608\_2050\_AWR + 608\_2050\_NMGT == + 40786.0
* 999Acreage
  + 999\_2021\_CAR + 999\_2021\_NAR + 999\_2021\_NMGT + 999\_2021\_SAR + 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_NMGT + 999\_2025\_SAR + 999\_2030\_CAR + 999\_2030\_NAR + 999\_2030\_NMGT + 999\_2030\_SAR + 999\_2050\_CAR + 999\_2050\_NAR + 999\_2050\_NMGT + 999\_2050\_SAR == + 3069.0

**Afforestation:**

* 999\_2025\_CAR + 999\_2025\_NAR + 999\_2025\_SAR <= + 3069.0
* AffCont30\_25\_CAR
  + 999\_2030\_CAR == 999\_2025\_CAR + 0.0
* AffCont30\_25\_NAR
  + 999\_2030\_NAR == 999\_2025\_NAR + 0.0
* AffCont30\_25\_SAR
  + 999\_2030\_SAR == 999\_2025\_SAR + 0.0
* AffCont50\_30\_CAR
  + 999\_2050\_CAR == 999\_2030\_CAR + 0.0
* AffCont50\_30\_NAR
  + 999\_2050\_NAR == 999\_2030\_NAR + 0.0
* AffCont50\_30\_SAR
  + 999\_2050\_SAR == 999\_2030\_SAR + 0.0

**No Management:**

* NoMgmt\_2021
  + 167N\_2021\_NMGT + 167S\_2021\_NMGT + 505\_2021\_NMGT + 608\_2021\_NMGT + 999\_2021\_NMGT <= + 310141
* NoMgmt\_2025
  + 167N\_2025\_NMGT + 167S\_2025\_NMGT + 505\_2025\_NMGT + 608\_2025\_NMGT + 999\_2025\_NMGT <= + 310141
* NoMgmt\_2030
  + 167N\_2030\_NMGT + 167S\_2030\_NMGT + 505\_2030\_NMGT + 608\_2030\_NMGT + 999\_2030\_NMGT <= + 310141
* NoMgmt\_2050
  + 167N\_2050\_NMGT + 167S\_2050\_NMGT + 505\_2050\_NMGT + 608\_2050\_NMGT + 999\_2050\_NMGT <= + 310141

**Ash Salvage:**

* 505\_2025\_ASV + 505\_2030\_ASV + 505\_2050\_ASV <= + 6515

**Thinning:**

* ThinTotal
  + 167N\_2021\_THNB + 167S\_2021\_THNB + 505\_2021\_THNB == + 246251.0
* Thin505\_2021
  + 505N\_2021\_THNB <= + 5197.0
* Thin167N\_2021
  + 167N\_2021\_THNB <= + 127759.0
* Thin167S\_2021
  + 167S\_2021\_THNB <= + 113295.0

**AWC:**

* TotalCedar
  + 608\_2021\_AWR + 608\_2025\_AWR + 608\_2030\_AWR + 608\_2050\_AWR + 999\_2021\_AWR + 999\_2025\_AWR + 999\_2030\_AWR + 999\_2050\_AWR <= + 40535.0
* AWRConvert2021
  + 608\_2021\_AWR + 999\_2021\_AWR <= + 1000.0
* AWRConvert\_2025
  + 608\_2025\_AWR + 999\_2025\_AWR <= + 4000.0
* AWRConvert\_2030
  + 608\_2030\_AWR + 999\_2030\_AWR <= + 5000.0
* AWRConvert\_2050
  + 608\_2050\_AWR + 999\_2050\_AWR <= + 20000.0

Attempt 5:

Changing the operator for Total thinning constraint from == to <=; making sure that thinning constraints for each forest type are correct and aren’t flip flopped again. The individual thin by forest type ones were correct, but changing the operator still resulted in an ERROR

**Thinning:**

* ThinTotal
  + 167N\_2021\_THNB + 167S\_2021\_THNB + 505\_2021\_THNB <= + 246251.0
* Thin505\_2021
  + 505N\_2021\_THNB <= + 5197.0
* Thin167N\_2021
  + 167N\_2021\_THNB <= + 127759.0
* Thin167S\_2021
  + 167S\_2021\_THNB <= + 113295.0

Attempt 6:

We are removing the continuity constraints for Afforestation/Reforestation to see if they’re the issue. That was not the issue, it’s still broken.

Attempt 7:

Running all normal constraints for acreage/year/forest type/no management, and just Thinning Management. Essentially, we’re running it by management type to see which management is broken.

IT WORKS!!!

Attempt 8:

Running normal constraint, no management, thinning, and ash salvage. IT WORKS!

Attempt 9:

Running normal constraint, no management, thinning, and ash salvage & cedar. It BROKE.

Attempt 10:

The math on the total cedar acreage constraint was wrong, so we’re fixing that. It’s still broken

* TotalCedar
  + 608\_2021\_AWR + 608\_2025\_AWR + 608\_2030\_AWR + 608\_2050\_AWR + 999\_2021\_AWR + 999\_2025\_AWR + 999\_2030\_AWR + 999\_2050\_AWR <= + 42975.0

Attempt 11:

Removing the yearly cedar removal constraints and just using the total constraint. Still Broken!

Attempt 12:

Normal constraints, no management, thinning, ash salvage, and afforestation/reforestation to make sure AF/RF isn’t also a problem child. It works! So all of these management constraints are working properly, and it’s just the cedar ones that are broken!

\*\*\*Everything except cedar is in here and works!!

Attempt 13:

Multiply TotalCedar acreage by 4 = 171,900, BROKEN

* TotalCedar
  + 608\_2021\_AWR + 608\_2025\_AWR + 608\_2030\_AWR + 608\_2050\_AWR + 999\_2021\_AWR + 999\_2025\_AWR + 999\_2030\_AWR + 999\_2050\_AWR <= + 171900
* AWRConvert2021
  + 608\_2021\_AWR + 999\_2021\_AWR <= + 1000.0
* AWRConvert\_2025
  + 608\_2025\_AWR + 999\_2025\_AWR <= + 4000.0
* AWRConvert\_2030
  + 608\_2030\_AWR + 999\_2030\_AWR <= + 5000.0
* AWRConvert\_2050
  + 608\_2050\_AWR + 999\_2050\_AWR <= + 20000.0

Attempt 14:

Same as attempt 13, but without conversion constraints, still broken!

Attempt 15:

999 Acreage constraints did not have AWR clicked on, still broken

Attempt 16:

With 999 constraint fixed, we’re removing the AWCConvert constraints to check if the TotalCedar is still broken; it’s still broken

Attempt 12.1

Take working attempt 12 and fix 999 acreage and add in AWR, broke it

Attempt 18:

No cedar constraints, constraints to set all AWR to 0, broke

Attempt 19:

Added up AWR optimized acres as the constant (based off of attempt 18), broke

Attempt 20:

Remove AWR from EVERYTHING. Broke the whole program, it didn’t like how we tried to zero out the cedar management type (constant = 0, left side = 0)

Attempt 20.1:

Same as before, but kept the left side as 1 and just changed the constant to 0. Still broke, but normal broke not coding broke

Attempt 21:

I looked at the optimized results from Attempt 12 and broke them down by year, forest type and management type and compared back to the constraints to piece together what it’s doing. I’ve realized that the forest type constraints should be one single constraint, not broken out by year. Error

Attempt 21.1:

Turned AWR mgmt off in the 999Acreage constraint, worked

Attempt 22:

All forest type acreage constraint a single constraint, added in an AWCtotal constraint. Error.

Attempt 23:

All forest type acreage constraint a single constraint, 999Acreage includes AWR, instead of doing TotalAWC constraint, just doing AWCconvert constraints. Error.

Attempt 24:

Force it to convert cedar by changing total cedar and cedar convert constraints from <= to ==. Error.

Attempt 25:

Made continuity constraints for cedar. Error

Attempt 26:

Based off of working attempt 12, remove 2021 from all AWR. From 2021 AWC Convert, remove this constraint, add 1,000 acres to 2025AWCConvert; 2021 acreage constraint, removed all management, only allowing no management in 2021. Error

Attempt 27:

For 2021 constraints, set all management constraints to 0 (by default the 310,141ac should go into no management which isn’t included in this constraint). Error.

Attempt 28:

Starting from scratch using ONLY cedar; total acreage, acreage by year & total cedar. WORKED

Attempt 29:

Forgot to include constraints by forest type. BROKE

Attempt 30:

Adjusted cedar acreages to be only state acres, no stewardship acres at all, BROKE

Attempt 31:

Based on attempt 28, added in a test constraint for 608AWR in 2025, worked

Attempt 32:

Added in 2025+2030, worked

Attempt 33:

Added in a second 608 constraint, worked

Attempt 34:

Same but also added in 999 worked

Attempt 35:

608 acreage constraint

Attempt 36:

Attempt 37:

999 test constraint broke

Attempt 38:

999Acreage constraint broke

Attempt 39:

Split cedar constraint by forest type, broke

Attempt 40:

Re-wrote 999 constraints. Making sure that no management acres can be repeated each period, and AWR management cannot be repeated on the same acres. broke

Attempt 41:

Deleted totalCedar999 constraint, direct conflict; broken

Attempt 42:

TotalAcreage + YearlyAcreage + 999Acreage constraint; worked

Attempt 43:

TotalAcreage + YearlyAcreage + 999Acreage constraint + Test constraint for 999 in 2025; worked

Attempt 44:

TotalAcreage + YearlyAcreage + 999Acreage constraint + Test constraint for 999 in 2025+2030, Test Constraint 999 forced 2025; worked

Attempt 45:

Attempt 44 + 608 Acreage constraint; broke

Attempt 46:

Just running total acreage & acreage by year

Attempt 47:

Attempt 46 + 999 and 608 constraints; broke

Attempt 48:

Removed attempt 47’s 999 and 608 constraints and added a new 999 constraint multiplied by 4 to attempt 46; worked

Attempt 49:

Added 608 multiplied by 4 constraint to attempt 48 and results were the same as attempt 48; worked numbers in wrong area

\*\*\*\*\*\*\*Attempt 50: PICK UP ON THIS ATTEMPT

Total acreage & acreage by year, created separate constraints for 608 and 999 for both AWR and NoMgmt; worked but it is putting 999 acreage into 608

-We are constraining by year correctly, but we are not constraining by forest type correctly

Attempt 51:

Attempt 50 + acreage constraints for 608 and 999; broke

Attempt 52:

Attempt 51 – acreage by year constraint ;broke